

## REQUEST FOR ACCESS OF ABANDONED APPLICATION UNDER 37 CFR 1.14(e)

In re Application

08/ 879,475

Application Number

08

Group Art Unit

Filed

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Paper No.

Assistant Commissioner for Patents  
Washington, DC 20231

I hereby request access under 37 CFR 1.14(a)(3)(iv) to the application file record of the above-identified ABANDONED application, which is: (CHECK ONE)

(A) referred to in United States Patent Number 5,889,386, column \_\_\_\_\_

(B) referred to in an application that is open to public inspection as set forth in 37 CFR 1.11, i.e., Application No. \_\_\_\_\_, filed \_\_\_\_\_ on page \_\_\_\_\_ of paper number \_\_\_\_\_

(C) an application that claims the benefit of the filing date of an application that is open to public inspection, i.e., Application No. \_\_\_\_\_, filed \_\_\_\_\_

(D) an application in which the applicant has filed an authorization to lay open the complete application to the public.

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# 24

**United States Patent**

[19]

**Koenck****Patent Number:** 5,889,386**Date of Patent:** Mar. 30, 1999

[54] **BATTERY CONDITIONING SYSTEM HAVING COMMUNICATION WITH BATTERY PARAMETER MEMORY MEANS IN CONJUNCTION WITH BATTERY CONDITIONING**

[75] **Inventor:** Steven E. Koenck, Cedar Rapids, Iowa

[73] **Assignee:** Intermec Technology Corporation, Everett, Wash.

[21] **Appl. No.:** 82,061

[22] **Filed:** May 20, 1998

**Related U.S. Application Data**

[63] Continuation of Ser. No. 879,475, Jun. 20, 1997, which is a continuation of Ser. No. 561,665, Nov. 22, 1995, abandoned, which is a continuation of Ser. No. 134,881, Oct. 12, 1993, Pat. No. 5,508,599, which is a continuation of Ser. No. 769,337, Oct. 1, 1991, Pat. No. 5,278,487, which is a continuation of Ser. No. 544,230, Jun. 19, 1990, abandoned, which is a division of Ser. No. 422,226, Oct. 16, 1989, Pat. No. 4,961,043, which is a division of Ser. No. 168,352, Mar. 15, 1988, Pat. No. 4,885,523, which is a continuation-in-part of Ser. No. 944,503, Dec. 18, 1986, Pat. No. 4,737,702, which is a continuation-in-part of Ser. No. 876,194, Jun. 19, 1986, Pat. No. 4,709,202, which is a division of Ser. No. 797,235, Nov. 12, 1985, Pat. No. 4,716,354, which is a continuation-in-part of Ser. No. 612,588, May 21, 1984, Pat. No. 4,553,081, which is a continuation-in-part of Ser. No. 385,830, Jun. 7, 1982, Pat. No. 4,455,523.

[51] **Int. Cl.:** H02J 7/00

[52] **U.S. Cl.:** 320/136; 320/107; 320/112; 320/114; 320/134; 320/427; 320/426

[58] **Field of Search:** 320/107, 106, 320/112, 113, 114, 115, 116, 134, 136; 324/426-435

**[56] References Cited****U.S. PATENT DOCUMENTS**

3,971,980 7/1976 Jungfer et al.  
4,295,097 10/1981 Thompson et al.  
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**Primary Examiner**—Edward H. Tso**Assistant Examiner**—K. Shin**Attorney, Agent, or Firm**—McAndrews, Held & Malloy, Ltd.**[57] ABSTRACT**

In an exemplary embodiment, a battery conditioning system monitors battery conditioning and includes a memory for storing data based thereon; for example, data may be stored representative of available battery capacity as measured during a deep discharge cycle. With a microprocessor monitoring battery operation of a portable unit, a measure of remaining battery capacity can be calculated and displayed. Where the microprocessor and battery conditioning system memory are permanently secured to the battery so as to receive operating power therefrom during storage and handling, the performance of a given battery in actual use can be accurately judged since the battery system can itself maintain a count of accumulated hours of use and other relevant parameters. In the case of a non-portable conditioning system, two-way communication may be established with a memory associated with the portable unit so that the portable unit can transmit to the conditioning system information concerning battery parameters (e.g. rated battery capacity) and/or battery usage (e.g. numbers of shallow discharge and recharge cycles), and after a conditioning operation, the conditioning system can transmit to the portable unit a measured value of battery capacity, for example.

**20 Claims, 24 Drawing Sheets**